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## ABSTRACT

This paper reviews the history and current status of services to children with attention deficit hyperactivity disorder in Finland. It notes the availability of free or almost free health services in Finland and the resulting very low infant mortality rate. The history of attention deficit hyperactivity disorders (ADHD), termed "minimal brain dysfunction" (MBD) in Finland from the early 1970s until the 1990s, is briefly reviewed as are major studies of MBD/ADHD in Finland. The paper describes how the need for information led to the establishment of the MBD Infocenter, a support and information center for parents of children with MBD/ADHD, and the MBD Association, also with the purpose of providing support to parents. Implementation of a screening program, followed by more thorough diagnostic evaluations, is described. A variety of therapies provided at local health centers or at the Infocenter, especially art therapy, music therapy, and structured neuropsychological group therapy (based on the program developed at the Chilean institution, La Corporaition para el Desarrollo del Aprendizaje), are also described. Finally, several cooperative efforts with Sweden, Denmark, and Norway are mentioned, including translation and publication of a novel about MBD/attention deficits; a yearly working group with representatives from all four Scandinavian countries; and development of a new term, "DAMP" (dysfunctions in attention, motor control, and perception). (DB)

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## ADHD IN FINLAND AND TYPES OF SCANDINAVIAN COOPERATION

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**FINLAND**

Finland is located in Northern Europe and shares its Eastern border with Russia. Its area is, when compared with other European countries relatively large, and if placed on the Central European map it would reach roughly from Brussels to Rome. Up North is the Arctic circle, and in Scandinavia there are more people living above this latitude than in any other part of the world.

Santa Claus has his residence in Finland and each year he gets more than 500.000 letters from children in all continents. In the North the reindeer, and in the South the elk often cross the roads and are very dangerous to car traffic. Some wild bears live occasionally in the Northern and Eastern parts of Finland, but in spite of all that, we are a well educated Western country. We have had a bad recession during the last years, and have an unemployment of about 20%. However, medical knowledge and health services are internationally of a high standard. In the beginning of the 1980s, we expended more money for education than any other country in the Western world.

Finland has five million inhabitants, of which more than one million live in and around the capital city, Helsinki, on the South Coast. About 60.000 babies are born each year; 80% of mothers are working, and 80% of preschool children attend day care centers or kindergarten.

## HEALTH SERVICES

Almost all health services in Finland are socialised and totally or almost free of charge. Services for pregnant women and children from birth to school age are offered at maternity and child welfare clinics. These services are used by almost 100% of families. At the child welfare clinics the babies are seen every month up to the age of one year by a nurse or a health center doctor. From one to six years the check-ups are once or twice yearly.

The health service have contributed to that we together with Sweden have the lowest infant mortality rate in the whole world. Also probably contributing to this decreased mortality is the fact that in the 70s, all small maternity hospitals were closed, and all births were centralised into large hospitals with modern equipment. Home births do not exist in the country.

## ATTENTION DEFICIT DISORDERS

Attention deficit disorders have been recognised in Finland since the early 70s. However, at that time, the common term was "minimal brain dysfunction", as it was defined by Clements in 1966. In Finland it has so been stamped into people's minds, that we still use it as a general term to mean children with attention deficits and a variety of co-occurring neurodevelopmental dysfunctions, such as problems with motor coordination, learning, perception and communication. The International Classification of Diseases, ICD is the official manual and the term in the manual is hyperactivity disorder. However, ICD also allows the countries to have own diagnostic numbers and in the Finnish version of the ICD-9 the term MBD was included as a separate diagnosis as described by Clements in the 60s. Since the beginning of 1996 the new version of the ICD-10 has been the official diagnostic manual in Finland, and MBD does not exist any more among the diagnoses and most probably the concept of ADHD is adapted in the near future.

## IT STARTED WITH RESEARCH

At the end of the 60s, when the definition of MBD, "minimal brain dysfunction" was first published, K. Michelsson was working at a large maternity hospital in Helsinki. At that time the general impression was that the dysfunctions were caused by a slight brain "damage" and the research was directed to find out the cause. In order to find children with MBD we started a prospective and extensive research project. All consecutive cases with any severe problems during or after birth were selected for the study. The study group was collected in 1971-74 and consisted of 1200 babies.

We decided to check the study group children when they were five years old. The follow-up was attended by about 850 children. Among the children we found several diagnosed with MBD according to the definitions of the 1960s. At that time, there was relatively little known about what could actually be done to help children with MBD. We supposed that special programs in the kindergartens would benefit their development, and we asked the kindergarten personnel to take into account the dysfunctions and behaviour of the children. The

kindergarten teachers were not aware of the syndrome and asked, however, what is MBD? We have never heard of it! What does it mean?

## INFORMATION

It was therefore obvious that little was known about the syndrome, and it seemed impossible to offer treatment and support for the children with MBD when nobody knew what it was all about. Thus, an information campaign was started in order to make people aware of the syndrome. This especially included politicians and others with the power to make decisions about day care, kindergarten and school services. One element of the information provided was a series of lectures given in different parts of the country to parents, teachers, doctors, nurses, psychologists, physiotherapists etc. We also gave talks on both radio and TV.

Written material about attention deficit and co-occurring problems was produced. One of our well-known authors wrote a novel concerning the life of an ADHD child from the mother's perspective and medical information was provided in the book. This book was translated into all Scandinavian languages, as well as Dutch, Greek and German. In our country, this medical information was the first written material in Finnish to become available to both parents and health personnel.

## MBD-INFOCENTER AND MBD ASSOCIATION

The need for information was great and gradually the Finns, including both professional and parents became aware of the existence of children with MBD/ADHD. Parents started to demand help for their child and concurrent family problems. An information center was founded in 1987 in Helsinki by a private organisation, the Children's Welfare Association. The concept of the Infocenter was to gather all available information in one place, and to staff this with personnel with a good knowledge of ADHD and co-occurring problems.

The Infocenter is still the only one of its kind in Scandinavia. It is a support and information center for parents of children with MBD, i.e. ADHD and other symptoms co-morbid with ADHD. In addition, the staff of day care centers, welfare and health clinics and school personnel can receive information about ADHD from the center.

The staff includes a director, a paediatrician, a psychologist, a social worker, a special teacher and music, art and speech therapists. Some primary diagnostic examinations are done, but for more comprehensive evaluations the children are referred to paediatric or child neurologic units.

The Infocenter is especially meant for parents of children with ADHD. The aim is to provide all available information about ADHD, in a site where the child can be evaluated and treated and possibilities for social support discussed. The personnel also helps with troubles in school, and gives information on possibilities for vocational training and rehabilitation. The staff at the Infocenter has good cooperation with schools, hospitals and health centers, and joint meetings are often held in order to arrange the best possible help and support for the child. The Infocenter also distributes printed information, lends videos and gives talks and lectures on various occasions to parents, school personnel, students and hospital staff.

The Infocenter is financed by Finland's Slot Machine Association, which operates slot machines and casino games in Finland and is the only organisation of this kind in the world. Financial assistance is provided to hundreds of organisations and promotes the welfare of thousands of people in Finland. The Association has a legal monopoly on slot machine and casino game operations. Gaming is regulated by law and controlled by the Ministry of Interior.

A local MBD Association was founded in Helsinki in 1978 and the National Association was founded in 1989. At present it has a membership of 15 local chapters from all over Finland. The members number only about 200, which is an extremely low figure, since there are about 100.000 ADHD children in the country. This clearly demonstrates, that we in Finland, even if we think that much has been done for children with ADHD are still very much at the beginning.

The purposes of the association are to support parents, to cooperate with other associations and to organise lectures, family courses and holiday activities. The activities are mostly provided by voluntary work done by the parents. At the moment, the secretary is the only person employed and she serves the whole country. The association also publishes a periodical four times yearly.

## SCREENING

Once information about MBD was disseminated, it became important to help affected children and have a diagnosis as early as possible. As a part of our prospective research study, we used a screening method suitable for child welfare clinics, health centers and kindergartens. The method was published in Lancet in 1971 and modified by our research group. By 1980, a part of the great Helsinki region had adopted this screening method, and it gradually became used in a large part of the country.

The screening examination was recommended to be used for 5-year-old children. As children start school in our country at age seven this would therefore give us time to provide some kind of rehabilitation before the start of school. We realised that even if hyperactivity and communication problems could be detected at three or four years of age, more comprehensive evaluations for motor functions, intellectual abilities, perception and communication could be more easily checked when the child was a little older and better able to concentrate and perform more difficult tasks.

The screening examination included tasks for motor skills, perception, speech and language, memory functions, intellectual abilities and behaviour. The children received scores for tasks which they were not able to perform. Children with high scores were recommended more extensive developmental and psychological evaluations at paediatric or child neurologic outpatient clinics and in hospitals.

The screening examination seemed to fulfil our intentions as we were able to identify children with a variety of neurodevelopmental disorders. The children in our research project have later been



checked at the age of nine years. It was thus found that 15% of children with high scores at the age of five years had had their school start postponed for one year and that another 15 % were placed in special small classes in school, while the percentage of children requiring special facilities was almost none among those who had received low scores at the age of five years. The health center doctors opinion was that the test taught them about child development generally and how to find subtle problems especially.

We also realized that the personnel in kindergartens and teachers in preschool and school were in a key position to detect children with ADHD and other neurodevelopmental dysfunctions. Also parents are often the first ones to suspect that something is wrong. One aim has been to promote them to be more attentive concerning dysfunction in behaviour and abilities and to get doctors to believe that something is wrong when parents say so.

## DIAGNOSTICS

More thorough diagnostic evaluations were planned for children who at the child welfare clinics were found to have impairment in some areas of development. If the dysfunctions are not severe, the primary health care in Finland usually takes care of the examinations, while more severe cases are referred to paediatric or child neurologic units. Diagnostics is usually team work and most often there are different professions involved in the examinations. In addition to the paediatrician or child neurologist, there is usually a psychologist, an occupational therapist, a speech therapist and a social worker, and if the child attends school, also the teacher.

Nowadays, most children with severe types of attention deficits, learning problems, etc., are found at preschool or early school age. However, less severe cases remain probably still unnoticed. Also, in adolescents and especially in adults, the diagnostic procedure is less good, and most cases of ADHD are probably not diagnosed or misdiagnosed. ADHD among adults is rarely known in our country, and actually I believe nobody is given that diagnosis.

## TREATMENT

The treatment plans for less severe cases of MBD/ADHD are usually made at local health centers. If the problems are severe, complicated or multiple, the plans are made at specialised hospitals. Most often there is a multidisciplinary team investigating the child and giving treatment recommendations. These are always based on individual test results and rely on the child's strong and weak areas. Treatments recommended are vocational therapy, speech therapy, occupational therapy, neuropsychological rehabilitation etc. These are usually given at local health centers, in the child's kindergarten etc; in other words, near to the home of the child. All these treatments are universally much alike, with the same kind of principles, and probably familiar to everyone. We will therefore only tell you about some different types of therapies in use at the Infocenter. These are art and music therapy and structured neuropsychological group therapy.

The therapies were started when our follow-up study had shown that many of the children diagnosed at preschool age had not recovered by

adolescence. Some of the impairments seemed to be permanent. Additionally, several of the children had lost their self confidence and many were also markedly depressed. We considered therefore that intensive training programs for developmental dysfunctions which are difficult to cure might be very stressful without giving the wanted results. We therefore decided to apply treatment methods which were less demanding and thus hopefully causing less stress. The main idea was to increase the child's self-confidence and give to the child experiences of succeeding.

## ART THERAPY

Art therapy has been provided since 1992. In art therapy the children work creatively with painting, modelling and drawing. The method of working is based on the Waldorf educational approach, developed by Rudolf Steiner,

In the work with ADHD-children, the approach is based on the creative process and the qualities of the different ways of working artistically. For children with, for instance low self-esteem, it can be of great value to experience satisfaction through something one has created.

In the therapy, the frames of the treatment sessions are very secure, because the therapist gives the children tasks that are adapted to the child's capacities and special difficulties. The therapist also supports the child in completing the tasks. The methods used in Art Therapy are: form drawing, painting with watercolours and clay modelling.

Form drawing includes rhythmical mirror drawing, when certain forms are repeated over the paper without stops or lifting the pencil. The relation of left/right and up/down is explored. Form drawing especially supports the child's visual perception. It also promotes eye-hand coordination and concentration. The children also acquire a feeling for form, geometric relationships and harmony.

Painting with watercolours on wet paper supports the child's form shaping capacity as well as the emotional balance. Small children often spontaneously talk about a "happy yellow" or a "sad violet". The painting is practised with broad brushes and painting the mood of the colours and their interaction is more important than the form. For the children this kind of painting often provides great pleasure.

Modelling with clay helps the child to become acquainted with forms. In addition, orientation in space and the capacity of perceiving three dimensional forms can be supported through working with clay.

The concentration span and patience are also trained because the children have to finish their tasks.

For each child an individual therapy plan is made up. In this plan the main therapeutic goals are set up as well as a more detailed plan. The goals of the therapy plan have usually included two or three of the following:

- To support and develop the span of concentration and attention
- To support and develop the visual perception and visual-motor capacity

- To strengthen the child's patience in doing tasks
- To help the child to be less restless or less passive
- To support and develop the child's self-esteem
- To gain greater psychic/emotional balance (in other words, less depression or obsessiveness or aggressiveness).

Also a space for free creativity is offered, where the children can choose the material and the theme. Although the goals of the therapy are divided into certain categories with partly a striving for functional progress and partly for emotional maturity, the main goal of art therapy is rather in the area of progress in emotional intelligence; that is in finding ones way socially and also in gaining more potential for empathy.

Since 1992 a follow-up study of 17 children, age 7 - 16, has been undertaken at the center. The children have attended art therapy for a period of two years, once a week. Each child has been tested by a psychologist on two occasions. The parents and the children have also answered some questionnaires.

The preliminary results from the case studies can be summarised as follows: Visual perception and visual-motor capacity as seen in the therapy situation have shown a slight improvement. Fine motor control showed almost the same pattern of improvement. Concentration and attention were the most improved faculties, with no one having no progress. The children's self-esteem also progressed in all cases but one. As to expressivity, slight progress was noticed. In their behaviour, all the children except one, did change their behaviour in a better direction: either from very hyperactive to more calm and restful or from very apathetic and passive to more active and participatory. In contact with others and in the capacity of working in a group most children developed to some degree. Five children became less aggressive and seven children less depressive.

## THE CDA METHODOLOGY

The name comes from the Chilean institution, La Corporación para el Desarrollo del Aprendizaje. The CDA-method is a group treatment for 5-18 year old children with neuro-developmental disorders. It has been applied in Santiago since 1979 and in Helsinki at the Infocenter since 1989.

The treatment is based on a holistic approach considering different kinds of cognitive, social and emotional aspects. All treatment is based on pre-established programs which are applied step by step to each individual. The treatment usually last 1-2 years.

All treatment is carried out in group sessions once a week by a multidisciplinary team of three therapists, e.g. psychologist, speech therapist and special teacher. As a complete unit the workshop covers 4 hours. The first hour is devoted to the preparation of the session, 2 hours to treatment and 1 hour to a clinical meeting.

All workshops cover the following areas: Notions of time and space (10 min.), language (25 min.), expressivity (25 min.), perception (15 min.), numerical (15 min.), and intellectual development (30 min.).



The parents course is conducted every second week in a one hour session held simultaneously with the children's group. The parents course has been constructed to give information and discuss daily problems and to give emotional support to the parents.

In CDA the term dynamics refers to those treatment components which are believed to cause behavioural or emotional changes in the child as well prevent behavioural problems. The workshop dynamics consists of three aspects:

- Physical space - one workshop requires three interconnected rooms
- Movement - after each brief period, the children change rooms and meet another therapist. The change of physical space makes it easier to pay attention.
- Use of time - short periods of activity with changing tasks, some more and some less demanding prevent excessive stress.

Through routine the temporal orientation is favoured and fatigue prevented.

Today the CDA-method is used only in Helsinki but will hopefully spread to other cities in the country and to Sweden. The Info-center is arranging training of new therapists.

Research concerning the benefit of the CDA therapy has been undertaken both in Helsinki, Finland and Santiago de Chile. The results indicate that the improvements in cognitive tasks were better the more impairments the child had. Significant changes were also noted in behaviour, social skills and emotional development. The parents had learned much about their child's dysfunctions and how to handle the problems.

## MUSIC THERAPY

Another type of therapy at the Infocenter is the functionally oriented music therapy, based on developmental theories, instead of psychoanalytical theories. It was developed about 20 years ago in Sweden. The functionally oriented music therapy may support such functions, as body control and body perception, fine and gross motor skills, concentration, perception and self confidence.

The main objective is to promote the comprehensive development of the child. The therapist's instrument is the piano and the child's main instruments are drums, cymbals and a variety of wind instruments. Participation does not presuppose musical talent or skills.

During the therapy session the therapist carefully observes the body control, balance, lateralization, grasping and fine tuning of motor skills. The important factor is the interaction between the therapist and the child, because the therapy is nonverbal. The communication happens through the music aided by body language, facial expression and gestures. The possibilities for the child to feel that he/she can manage without any advice is a very important experience for a child with ADHD.

## FAMILY COURSES

In Finland we have also so called "family courses", a kind of family camps with the special aim of giving information and support and also a forum in which to discuss the family's own problems. Finland was a pioneer among the Nordic countries in arranging the first family courses in 1985.

The course lasts one week and the child with ADHD, the parents and even the sisters and brothers participate. There are different programs for the children and the parents, but there are also joint activities. The most important aim of the course is to strengthen the functioning of the child and family in situations that may arise because of the handicap. Lectures by specialists, such as physicians, social workers and teachers are arranged for the parents. The courses are free of charge for the families.

### SCANDINAVIAN COOPERATION

The information campaign about MBD/attention deficits in Finland included a novel which was translated from Finnish into Swedish, Danish and Norwegian. This was a personalised way to lead to an increased awareness of the dysfunction and the need for services for these children. Several TV-programs were shown in all Nordic countries. Local conferences were arranged in all of the Scandinavian countries.

In 1988, the first working group was arranged in Helsinki with invited experts from several professions and from all Nordic countries. Ever since we have met every year, and discussed information, diagnostics and therapy of children with MBD and ADHD. In Sweden, a new term DAMP, has lately been used, meaning dysfunctions in attention, motor control and perception.

Our latest project has been to develop a comprehensive questionnaire concerning all the problems that may arise under the DAMP definition. The form has about 150 questions and has this year been tried in all Nordic countries, and will during 1997, be recommended for use at child health centers and in school environments.

In Scandinavia, much has been done to organise information, interventions and support for children with ADHD/MBD/DAMP. However, those with purely ADHD, who do not have motor and perceptual problems are unfortunately still almost totally without attention and treatment. ADHD in adolescents and adults has not yet been recognized, and much has still to be done before the best possible treatment and support has been arranged for ADHD/MBD children.



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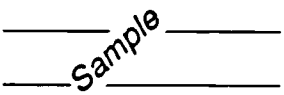


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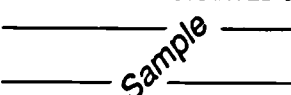
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